but our good friend says he "waited patiently"—in my opinion, not patiently enough—to be able to write reasonably on such a topic. Probably some person has shown "Scotland Forever" a Clyde grade colt and called it a Shire, hence his criticisms. Among horsemen there seems to be the opinion that there is plenty of room for both breeds. I have seen and also been behind a team of Shires hitched to a plow, the speed of which would make our friend's head whirl. For further information I would refer him to your issue of July 1st, page 226, in the Questions and Answers column; trusting that column will be thoroughly digested by him is the wish of— A. G. H.

Some Parasites of the Domesticated Animals.

[From an address to the Farmers' Institute, by Fred. Torrance, B.A., D.V.S., Brandon, Man.]

(Continued from page 308.)

Let us pass on to another class of parasites attacking the skin.

The *Acari* or Mange Parasites.—These are very much smaller than the *Pediculi*, or lice, and require the use of a good magnifying-glass or microscope for their detection. But the condition they produce in the skin, commonly known as mange, is very apparent. In horses there are three species of these parasites. Two of them produce mange of the body, while the other species confines its attacks to the extremities, when it produces foot-mange. Body-mange is fortunately not as common in this Province now as it was a few years ago. It is characterized by intense itching of the parts affected, followed by loss of hair and thickening of the skin. Usually beginning in the side of the neck, it spreads with greater or less rapidity until the whole body may be affected. While not difficult to cure in the early stages, it is different when the disease has become well established and the skin is thick and resembling the hide of an elephant more than that of a horse. This disease is included among the contagious diseases in the Act respecting the contagious diseases of animals; and it is the duty of any one having a case of this disease to notify the Department of Agriculture, when the Provincial Veterinarian will direct the treatment requisite to eradicate it.

Foot-mange is not so serious as body-mange, but is comparatively of common occurrence. It usually begins on the hind legs, causing the horse to stamp his feet and rub his legs together, and, after a time, producing a condition of the skin which is often mistaken for "grease" or *eczema*. Coarse-bred, heavy horses are most liable to become affected, the thick hair affording good shelter for the parasites. The skin is scurfy, and the hair much broken and woolly.

This form of mange follows an extremely slow course, and a horse must be greatly neglected by its owner, even for several years, before the disease invades the upper part of the limbs and the trunk. It shows itself almost exclusively during winter; not that the parasites abandon their host during the summer, but probably because during that season the natural secretions of the skin are more abundant and dispense with the necessity for actively pricking it in order to excite the exudation of nutritive fluid.

The disease may persist for several years if the horses are badly groomed. The skin then becomes thickened and the legs swell. Cracks form across the skin, above and below the fetlock, and in these furrows there is a greasy, purulent secretion, in which may be found the parasites.

Foot-mange is generally easy to cure if the remedies are properly applied. The first requisite is to clip off the hair; then wash the legs thoroughly with soft soap and water and apply the remedy selected. A mixture of sulphur, lard, and coal oil will be found effectual in most cases. Whatever the remedy, it should be applied more than once, at intervals of a few days, so that as the eggs hatch out the young parasites may be destroyed before they have time to breed. Curry-combs and brushes should be disinfected by washing in carbolic solution.

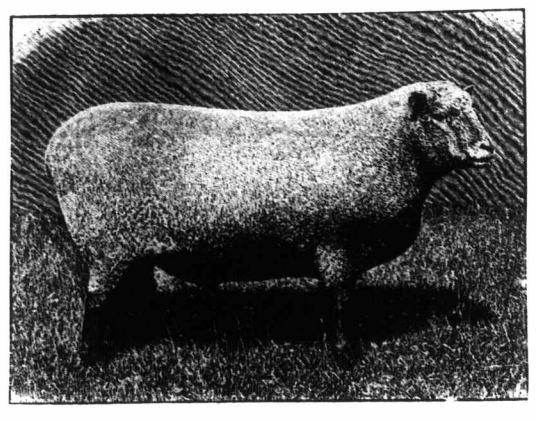
Each of the domesticated animals, as well as man, has its species of acarus or mange parasite, and it is a remarkable fact that, with few exceptions, the acarus of one animal will not thrive on an animal of a different species. The acari of the horse, for instance, will not attack cattle or sheep, and if purposely transplanted will live only a short time and disappear. The parasites of the sheep will not attack any of the other domesticated animals. Each species has its own particular parasite. Among the domesticated animals the sheep is the one upon which this form of parasitism is the most damaging. Living in flocks, they offer the best facilities for contagion. The wool offers an excellent shelter for the parasites and great opposition to the action of remedies. The large number of animals under the care of one shepherd makes it difficult for him to watch each individual case. All these facts concur to make an attack of mange among sheep, or *sheep scab*, as it is called, a most serious matter for the owner of sheep. In Manitoba we are fortunately free from sheep scab, I believe, but it has been imported into the Province in the past on sheep from the United States, and only the prompt action of the authorities prevented it from gaining a foothold. We need not, then, give it more than passing notice, but take up another parasitic skin affection which is very common and which I am sure you have all seen.

RINGWORM—"*Tinea tonsurans*."—Unlike the diseases we have been hitherto considering, this is caused by a *vegetable*, not an animal, parasite. Belonging to the same class of vegetable life as the molds which form on the surface of stale bread or cheese, the ringworm parasite differs from them in growing on living animal tissue. The ringworm parasite, then, is a fungus or mold, and propagates itself by spores in a similar manner to the smut of wheat. The spores, when they rest on a suitable part of the skin, grow and form filaments, which are virtually little roots striking down into the outer layer of the skin, and forming at the last a network of vegetable fibers, matted together by the exudation from the skin. By this time the hair has fallen out over a circular patch, which is covered by a thick brown crust or scab, which keeps slowly enlarging in every direction. The disease seems, in many cases, to be self-limiting, for after a certain time the crust stops growing, the scab drops off, and the hair gradually reappears. But probably, at the same time, the disease has appeared on other parts of the body, and one ringworm follows another.

It is more frequently observed on cattle than on other animals, but may be transferred from one to another, the parasite appearing to thrive on any of them, as well as on man. It is usually seen as a circular patch upon the face of a calf; near the eye being a favorite situation, and young animals more susceptible than old. Ringworm is frequently transferred from cattle to man, and I have seen children infected in this way. For this reason, if for no other, ringworm should always be treated, and is not difficult to cure. Carbolized glycerin, 1–10, repeated twice a day, or ointment of white precipitate, 1–4, every second day, will effect a cure.

(TO BE CONTINUED.)

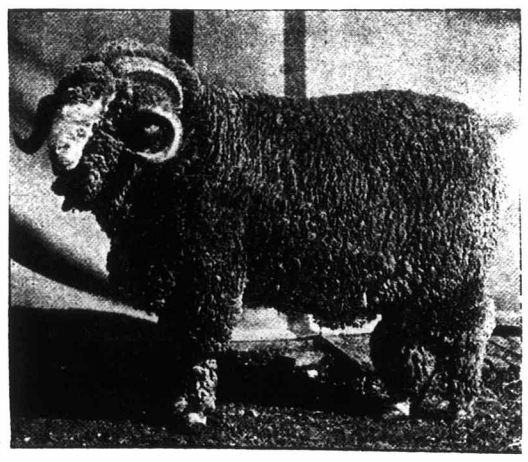
Two Breeds of Sheep -- A Contrast.



THE ARISTOCRATIC SOUTHDOWN.

To the studious live stock breeder there is no more interesting subject than the consideration of the respective parts played by heredity and environment in the evolution of various types of pure-bred live stock as we find them to-day.

Men like the Ellmans (of Southdown fame) step in with ideals of beauty and utility, and, taking advantage of natural laws and conditions, in due time produce from the best material at hand a type which becomes so "fixed" as to earn the designation, "*breed*"; though when transplanted into other districts and conditions a very perceptible alteration will go on. Hence, if the original type is to be preserved, we find breeders returning to the original sources for breeding stock. From Prof. Wrightson's admirable work on the sheep we reproduce the engraving given above.



PURE AUSTRALIAN-BRED NEGRETTI MERINO RAM.

In striking contrast with the refined and graceful Southdown stands the Merino, which in so many countries (Great Britain and Canada being noteworthy exceptions) has been the dominant breed of sheep. As a corollary an English contemporary recently remarked: "In no country but Great Britain is good mutton so common." A widespread type of the Merino is illustrated herewith, and which Prof. Robt. Wallace regards as probably the best suited for the present requirements of South Africa, the agricultural conditions and prospects of which he has investigated with great thoroughness.

Live Stock Quarantine.

We understand that Hon. Mr. Fisher, the new Canadian Minister of Agriculture, will meet the members of the Dominion Cattle, Sheep, and Swine Breeders' Associations on one of the evenings of the second week of the Toronto Industrial Exhibition, to discuss the important matter of quarantine regulations and other questions of interest. The gathering will take place in the tent occupied by the Secretary of the above named organizations.

Home Surgery.

Many a good animal has been lost through neglect, which a little attention at the proper time would have saved. Neglect, very often simply because one does not consider himself a doctor, or because he dislikes to fuss with sick or wounded animals. A few stitches and some attention, even in a rough way, may save a wounded animal's life, or at least prevent an unsightly scar. Even a fowl is sometimes worthy of a surgical operation. If a chicken or young turkey is crop-bound, it is almost sure to die except treatment be given. A few lumps of lard poked down it's throat may cause the removal of the grain, but it is quite safe to open the crop and remove the obstruction, then sew it up carefully with silk thread and keep the subject quiet for a few days, upon a soft and nourishing diet, when it will go on and thrive as if nothing had happened.

FARM.

Lightning Conductors.

The destruction of many valuable farm buildings by fires caused by lightning this season revives interest in the subject of lightning rods.

When an electrified cloud approaches another cloud or the earth near enough, its electricity and the opposite kind (respectively called positive and negative) induced on the neighboring cloud or earth rush together, producing the great electric spark called lightning, which is said to travel at the rate of nearly 200,000 miles per second. There are three kinds: *forked*, going in sharp zigzag lines by the way of least resistance to the earth; *sheet* or *heat*, of pale, diffused light, not usually accompanied by thunder; and *ball* lightning, a very rare form.

As to the efficacy or otherwise of lightning rods, we have made inquiry of the Manager of the London Mutual Fire Insurance Company, which carries farm risks to the amount of some $15,000,000 annually, and he states that in an experience of thirty years that only on two or three occasions have they had barns struck that were rodded, but they were not burned. When the fact is also borne in mind that the Company's losses from lightning fires have averaged $26,000 annually for the past five years, but in no case were they on protected buildings, it seems good evidence in support of rods, and we would say that the insurer with properly-rodded buildings should receive some consideration in the matter of rates.

As Mr. Macdonald observes, lightning rods have fallen into disrepute very largely through the rascalities practiced by some agents selling them.

The principle of protecting buildings by lightning rods was discovered by Franklin. It is pretty generally conceded by men conversant with the habits of lightning, that buildings with conductors, when struck by lightning, suffer little damage compared with those without protectors. This is the case only when proper conductors are arranged as they should be. A blunted point, or a break in the continuity of the connection, renders lightning rods probably worse than useless, and we have seen very many of them in that condition.

The main function of a lightning rod is to conduct the charge to earth. It is therefore important that it be *continuous* and *terminate in damp soil* or *running water*. Another function claimed is the prevention of a violent discharge by silently and continually drawing upon cloud electrification, or neutralizing it by the opposite sort ascending from the earth.

Sir Wm. Thompson, an eminent authority, in a discussion at the British Association for the Advancement of Science meeting in 1888, said: "We have very strong reasons to feel that there is a very comfortable degree of security, if not of absolute safety, given to us by lightning conductors made according to the present and orthodox rules."

Galvanized iron or copper conductors may be used. If the latter, one weighing about six ounces to the foot, and preferably in the form of tape, is considered about right. If iron be used, and it seems to be in every way as efficient as copper, have it in rod or twisted tape form, weighing about 35 ozs. to the foot. If the conductor at any part of the course goes near water or gas mains, it is best to connect it with them. The tops of the rod should be plated, or in some way protected from corrosion and rust. Clusters of points or groups of two or three along the ridge-rod, at intervals, are recommended. Points and rods should be regularly and carefully examined throughout to see that they are in perfect condition and properly fastened to the building.